UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/753,245	12/29/2000	Sung-Hoon Baek	51876p219	8804

8791	7590	02/10/2005

EXAMINER
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ART UNIT	PAPER NUMBER
2153	

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/753,245	BAEK ET AL.
	Examiner	Art Unit
	John R Brancolini	2153

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>23 August 2004</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-9</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-9</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>23 August 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *   c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

This action in response to Amendment filed August 23, 2004.

Claims 1-9 are currently pending in the application.

Drawings

Objections to the drawings are withdrawn due to amendments to the Specification.

Claim Objections

Objections to claims 3 and 8 are withdrawn due to amendment.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Lui et al.

(US Patent 5812754), hereinafter referred to as Lui.

In regards to claim 1, Lui discloses an apparatus for a redundant interconnection

between multiple hosts and a RAID, comprising:

- A plurality of RAID controlling units for processing a requirement of numerous

   host computers (Figure 3 shows items 302 A and B, separate RAID controllers).

- A plurality of connecting units for connecting the plurality of RAID controlling units to the numerous host computers (In Figure 3, controller chassis 344 contains a plurality of connecting units, the connections between the local hosts and the host loops, see also col 5 lines 36-40).

- Wherein each of the plurality of RIAD controlling units includes a plural number of network interface controlling units for directly exchanging information with the numerous host computers and a network interface controlling unit included in another RAID controlling units, through the plurality of connecting units (each separate RAID unit interacts directly with a host loop, which in turn communicates directly through a port bypass circuit and a serializer/deserializer for communication with the local host, col 5 lines 24-40).

In regards to claim 2, Lui discloses the respective RAID controlling units are connected to the plurality of individual connecting units (Figure 3 shows several individual connecting units connected to the RAID controlling units, see also col 5 lines 36-40).

In regards to claim 3, Lui discloses plural number of the network interfacing controlling units are a first network interface controlling unit being connected to the connecting unit of one side and a second network interface controlling unit being connected to the connecting unit of another side (Figure 3 shows the two separate Raid

controllers, each with a host loop which acts as a network interface controlling unit, as discussed in claim 1).

In regards to claim 4, Lui discloses: the first network interface controlling unit processes the requirement of the numerous host computers (the first host loop is provided for communication to a local host, col 5 lines 36-38); and the second network interface controlling unit is used for communication between the respective RAID controlling units when the respective RAID controlling units are not faulty and the second network interface controlling unit is used for executing a function of the first network interface controlling unit included in the respective RAID controlling units when the respective RAID controlling unit is faulty (when an error is detected, the control of the network interface function can be switched from the first to the second host loop, thereby insuring the fault tolerance is provided, col 6 lines 11-32).

In regards to claim 5, Lui discloses the plurality of connecting units have connection ports more than three, the two connection ports among them being connected to said network interface controlling unit and the rest connection ports thereof being provided as a hub equipment connected with the numerous host computers (in Figure 3, the connection chassis shows a plurality of connecting units, two of the connection ports being used to connect to the host loops, and the rest used in a hub, or switching manner, for the various host computers).

In regards to claim 6, Lui discloses the plurality of connecting units have the connection ports more than three, the two connection ports among them being connected to said network interface controlling unit and the rest connection ports thereof being provided as a network switch equipment connected with the numerous host computers (in Figure 3, the connection chassis shows a plurality of connecting units, two of the connection ports being used to connect to the host loops, and the rest used in a hub, or switching manner, for the various host computers).

In regards to claim 7, Lui discloses the plurality of connecting units have the connection ports more than five, the four connection ports among them being connected to said network interface controlling unit and the rest connection ports thereof being provided as a switch connected with the numerous host computers (in Figure 3, the connection chassis shows a plurality of connecting units, with at least 6 points of connection including the host loops, two of the connection ports being used to connect to the host loops, and the rest used in a hub, or switching manner, for the various host computers).

In regards to claim 8, Lui discloses the RAID controlling unit, the network interface controlling unit and the connecting unit are respectively constructed in pairs, the first network interface controlling unit of a first RAID controlling unit being connected to a first connecting unit, the second network interface controlling unit of said first RAID controlling unit being connected to a second connecting unit, the first network interface

controlling unit of a second RAID controlling unit being connected to the second

connecting unit, and the second network interface controlling unit of the second RAID

controlling unit being connected to the first connecting unit (in Figure 3, one can see

that each of the RAID controlling unit, the network controlling unit [the host loop] and the

connecting unit [the chassis back plane individual connections] are in pairs, and the

crossover of the fibre wiring allows for the first set of components to communicate with

the second set, see also col 6 lines 11-32 for how the bypasses occur between the

component sets in case of an error).

In regards to claim 9, Lui discloses apparatus for a redundant interconnection

between multiple host computers and a RAID, the apparatus comprising:

- A plurality of connection units for connecting the host computers and the RAID

    (Figure 3 shows items 302 A and B, separate RAID controllers).

- A first and a second RAID controllers, included in the RAID, each of which having

    a first network interface controller and a second network interface controller for

    processing requests from the plurality of the host computers connected through

    the plurality of the connection units (In Figure 3, controller chassis 344 contains a

    plurality of connecting units, the connections between the local hosts and the

    host loops, see also col 5 lines 36-40, additionally figure 7 shows multiple RAID

    controllers).

- Wherein the first network interface controller in the first RAID controller supplies

    data to the host computers connected through the plurality of connection units

and processes information transmitted from the second network interface

controller in the second RAID controller (each separate RAID unit interacts

directly with a host loop via a network controller, which in turn communicates

directly through a port bypass circuit and a serializer/deserializer for

communication with the local host, col 5 lines 24-40).

- Wherein the first network interface controller in the second RAID controller

  supplies data to the host computers connected through the plurality of connection

  units and processes information transmitted from the second network interface

  controller in the first RAID controller (each separate RAID unit interacts directly

  with a host loop via a network controller, which in turn communicates directly

  through a port bypass circuit and a serializer/deserializer for communication with

  the local host, col 5 lines 24-40).

- Wherein the second network interface controller in the first RAID controller is

  used for fault tolerance by performing functions of the first network interface

  controller in the second RAID controller when the second RAID controller is faulty

  (when an error is detected, the control of the network interface function can be

  switched from the first to the second host loop, thereby insuring the fault

  tolerance is provided, col 6 lines 11-32).

- Wherein the second network interface controller in the second RAID controller is

  used for fault tolerance by performing functions of the first network interface

  controller in the first RAID controller when the first RAID controller is faulty (when

  an error is detected, the control of the network interface function can be switched

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from the first to the second host loop, thereby insuring the fault tolerance is

provided, col 6 lines 11-32).

Response to Arguments

Applicant's arguments as presented in the Remarks section:

1. Lui does not disclose or teach two separate network controlling units included in one RAID controller.

In response to argument 1, the examiner respectfully disagrees with application. As

shown in Figure 3, Lui provides multiple RAID controllers. In each controller, multiple, in

this case two, network controlling units are shown on the controller backplane. Each of

these controller units are directly connected to one of two individual network controlling

units on the individual RAID controller, marked on each controller as 326.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

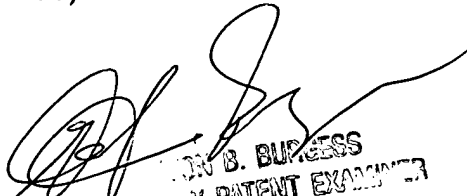extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John R Brancolini whose telephone number is (571) 272-3948. The examiner can normally be reached on M-Th 7am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on (571) 272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JRB